Uttarakhand: The Ultimate Destination of Nature Lovers

– Dr. Subodh Mahanti

"Leave the road, take the trails"
-Pythagoras

Uttarakhand situated on the southern slope of the Himalayan range, 'stands as a testament to nature's grandeur.' It is endowed with incredible natural beaty, which is truly breathtaking. The landscape of the state is such that it can mesmerize you at every turn. It is unique geologically and hydrologically. Uttarakhand's unique natural beauty and diversity beckon travelers from across the world. It has every ingredient to make it the ultimate destiny of nature's lovers. Snow-covered towering peaks of the Himalayas stand in unparalleled majestic grandeur, as they are standing there to guard the unique heritage of stunning beauty of the region. The inspiring presence of these majestic mountains will continue to draw all those who are interested in nature's grandeur. Their mysteries will never cease to exist. Uttarakhand's glaciers emanating from the snow-covered mountains are sources of some of the major rivers of India, including the Ganga and the Yamuna. The sparkling rivers and stunning waterfalls create such a mesmerizing effect that it remains etched on one's mind forever. The enchanting oak, Buransh (*Rhododendron arboreum*) and pine forests leave one enchanted and beacon nature lovers to explore the mysterious world of plants and trees and to discover their secrets. The state boasts a diverse range of native flowers having aesthetic, cultural and ecological significance. The bloom of Brahma Kamal (*Saussurea obvallata*), the divine flower of Uttarakhand, has become a coveted sight for nature lovers. The Valley of Flowers, a UNESCO World Heritage Site, is no less than heaven for nature lovers.

"Land of the Gods"

The state, which is called Dev Bhumi (Land of the Gods), is home to some of the most sacred pilgrimage sites. The main pilgrimage centres called Char Dhams of Uttarakhand, namely, Badrinath, Gangotri, Kedarnath and Yamunotri, are greatly revered. Panch Prayag or the five sacred river confluences namely, Vishnu Prayag, Nand Prayag, Karn Prayag, Rudra Prayag and Dev Prayag and Panch Kedar or the five holy places dedicated to Lord Shiva, namely, Kedarnath, Tungnath, Rudranath, Madhyamaheswar and Kalpeshwar are located in Uttarakhand. Here the rivers and mountains are worshipped.

Divisions and Districts of Uttarakhand

The state is divided into 13 districts under two divisions namely Garhwal and Kumaon. The Garhwal division has 7 districts namely Chamoli, Dehradun, Haridwar, Pauri Garhwal, Rudraprayag, Tehri Garhwal and Uttarkashi. The Kumaon division has 6 districts namely, Almora, Bageshwar, Champawat, Nainital, Pithoragarh and Udham Singh Nagar.

Creation of the State

The state of Uttarakhand came into existence as the 27th state of India in 2,000. Shri K. R. Narayanan, the then President of India, approved the Uttar Pradesh Reorganisation Bill on 28 August 2,000 and it turned into an Act on 9 November 2,000. At the time of its creation, its name was Uttaranchal. In January 2007, the name of the state was changed from Uttaranchal to Uttarakhand. It has been reported that the name 'Uttarakhand' finds mention in early Hindu scriptures as the combined region of 'Kedarkhand' (present day Garhwal) and 'Manaskhand' (present day Kumaon).

Uttarakhand—Some Important Facts	
Date of establishment:	9 November 2,000
Total area:	53,483 square kilometres
	(20,650 square miles)
Length:	320 kilometres (200 miles)
Width:	385 kilometres (239 miles)
Capital:	Dehradun
Largest City:	Dehradun
Number of Districts:	13
Largest district:	Chamoli (7,613 square km)
Smallest district:	Champawat (1,781 square km)
Highest elevation:	7,817 m (Nanda Devi)
Lowest elevation:	187m (Sharda Sagar Reservoir)
Population:	1,00,86,292 (as per 2011 Census)
Population density:	189 per square km
Literacy	78.82 % (2011)
State official language:	Hindi and Sanskrit

A State with a Long History

The state has a rich and ancient history. Its history dates back to prehistoric times, it goes back to Stone Age. Rock shelters at Lakhudiyar, Almora are cited as evidence of Stone Age settlements. Besides rock shelters, the presence of paleolithic age stone tools, ancient rock paintings and megaliths also indicate that the region has been inhabited since the prehistoric times. A part of the ancient Kuru and Panchal kingdoms during the Vedic Age, it witnessed the rise of dynasties like Kuninda. The Kuninda kingdom disappeared around the 3rd century. The geographical area represented by the state came under Buddhist influence. One of the Edicts of Ashoka on a pillar is present at Kalsi, in the region of Garhwal.

State Symbols

The ***Himalayan Monal*** (*Lophophorus impejanus*) is the ***state bird*** of Uttarakhand. A pheasant of the Phasianidae family, the Himalayan Monal is also known as Impeyan Monal, Impeyan Pheasant and Danphe. It is also the national bird of Nepal. Himalayan Monal males have spectacular iridescent plumage and stunning metallic colour. It is one of the most beautiful birds in India.

Himalayan Monal—the state bird.
(Courtesy: ebird.org/species/himalayan1)

The Alpine Musk Deer (*Moschus chrysogaster*) (an alpine species of Kasturi Mrig) is the ***state animal*** of Uttarakhand.

Kafal (*Myrica esculenta)* is the ***state fruit*** of Uttarakhand. It is a small, round, and juicy berry. In the melodious folk music of Kumaon, the kafal is described as the fruit of the gods.

Kafal- the state fruit (Courtesy: www.uttarakhandi.com)

Buransh (*Rhododendron arboreum*), is the ***state tree*** of Uttarakhand. The tree, which plays a significant role in the folklore and folk songs of the hilly state, blooms in a variety of colours but mostly in a dark red hue.

Buransh—the state tree (Courtesy: thepahadilife.com)

Brahma Kamal (*Saussurea obvallata*) is the ***state flower*** of Uttarakhand. It is one of the most famous flowers seen in the Himalayas and it comes under Sunflower family. Brahma Kamal occupies an important place in Hindu mythology. It is considered a symbol of purity and transcendence. Brahma Kamal is a nocturnal flowering plant and it blooms only at night. It takes about two hours to attain full bloom. To watch Brahma Kamal bloom is sheer ecstasy. Its exquisite beauty captivates everyone. Many nature lovers visit Uttarakhand just to see these flowers in full bloom.

Brahma Kamal—the state flower (Courtesy: Wikipedia)

Golden Mahseer (*Torputitora*) is Uttarakhand's ***state fish***. It is also known as Himalayan Mahseer. They are found in rapid streams, riverine pools and lakes. It has become an endangered species.

Golden Mahseer—the state fish (Courtesy: villagesquare.in)

Common Peacock (*Papilio bianor*) is the ***state's butterfly***. Watching butterflies is a

passion for many nature-enthusiasts. "Sitting in a Himalayan garden, watching butterflies all day is an idyllic, intoxicating pastime, as each delicate imago appears before us, fluttering through sunlight and shadow. Vladimir Nobokov, who was both a novelist and a lepidopterist once mused, 'Literature and butterflies are the two sweetest passions known to man.'" (quoted from *Wild Himalaya: A Natural History of the Greatest Mountain Range on Earth* by Stephen Alter, Aleph, 2019). It is interesting to note that 'thirty percent of butterfly species that occur in India are found in the Garhwal region of the Western Himalaya' (Arun Pratap Singh and Sanjay Sondhi, "Butterflies of Garhwal, Uttarakhand, Western Himalaya, India", *Journal of Threatened Texa*, April 2016).

Common Peacock—the state butterfly
(Courtesy: Wikipedia Commons)

National Parks, Wild Sanctuaries and Conservation & Biosphere Reserves

The state has 6 National Parks:

1. ***Corbett National Park:*** It is Asia's first national park established in 1836. It is located in Nainital district of Uttarakhand. The park has been named after Jim Corbett (1875-1955), the legendary hunter, tracker, naturalist and author. It is home to a large number of tigers, the highest among any Indian national park.

2. ***Gangotri National Park*****:** It is located in the upper catchment area of Bhagirathi River in Uttarkashi district. The origin-point of the river Ganga, that is Gomukh at Gangotri glacier is located inside this park. It was established in 1989. Its geographic location is unique and it is rich in flora and fauna. It is home to several endangered species including bharal or blue sheep, Himalayan Monal, Himalayan Snowcock and Himalayan thar.

3. ***Govind Pashu Vihar National Park and Wildlife Sanctuary****:* It was initially established in 1955 as a wildlife sanctuary and later converted into a national park. It has been named after Pandit Govind Ballabh Pant (1887-1961), an Indian freedom fighter and the first Chief Minister of Uttar Pradesh. It is located in Uttarkashi district and it includes mountain peaks like Swargarohini, Black Peak and Bandapunch. It is an area of lush green forests, breathtaking scenary and high faunal diversity. The Snow Leopard Project is being implemented at this sanctuary. It is also one of the remaining strongholds of the bearded vulture which is regarded as a vital ecological catalyst.

4. ***Nanda Devi National Park*** *(*it is embedded in the Nanda Devi Biosphere Reserve)

Nanda Devi—the highest mountain of Uttarakhand
(Courtesy: Wikipedia)

5. ***Rajaji National Park****:* It covers 820km^2 and it is spread across three districts of Uttarakhand—Haridwar, Dehradun and Pauri Garhwal. The

park is known for its elephant population and is also a place of scenic beauty and rich biodiversity. The park came into existence in 1983 with the merger of Rajaji wildlife sanctuary with two other sanctuaries viz., Matichur and Chilla. The park has been named after C. Rajgopalachari (1878-1972), who was also popularly known as Rajaji. He was the first Governor-General of Independent India.

6. **Valley of Flowers National Park**

Valley of Flowers. (Courtesy: euttaranchal.com)

The state has 7 Wildlife Sanctuaries:

1. ***Askot Wildlife Sanctuary**:* It is also known as Askot Musk Deer Sanctuary. It is located 54 km from Pithoragarh near Askot. The sanctuary marks the origin points of two rivers, namely, Dhauli River and Ilki River and the Gauri Ganga River passes through it. It was established with the object of conserving the white-bellied musk deer (*Moschus leucogaster*) and its habitat. The famous mountain peaks like Panchachuli, Neodhura, Naukana, Chhiplakat and Najrikot form part of the sanctuary.

2. ***Binsar Wildlife Sanctuary**:* It is located in the lower Himalayas, about 30km north of Almora. It was established in 1988 to conserve and protect the shrinking broad leaf oak forests. It houses a museum about flora and fauna of the region. It may be noted that Binsar was the summer capital of the Chand Kings, who ruled over Kumaon during the 11th to 18th centuries CE.

3. ***Govind Wildlife Sanctuary*** (see Govind Pashu Vihar National Park and Wildlife Sanctuary)

4. ***Kedarnath Wildlife Sanctuary**:* It is also called Kedarnath Musk Deer Sanctuary. It was established primarily for protecting the highly threatened Himalayan musk deer (*Moschus chrysogarter*) or the alpine musk deer. It is the largest wildlife sanctuary in Uttarakhand. It consists of an area of 975.20 km^2. It was established in 1972.

5. ***Mussoorie Wildlife Sanctuary**:* It is also known as Benang Wildlife Sanctuary. It is part of the Rajaji National Park. It is located about 11km from Library point in Mussoorie, the 'Queen of the Hills'. The park is known for its rare species of colourful birds and magnificent wildlife. It is also known for nature forest walk and day trek.

6. ***Nandhaur Wildlife Sanctuary**:* It lies between the Gola and Sharda Rivers in the Haldwani forest division. It is home to tigers, wild elephants, leopards, jungle cats, nilgais, small Indian civets, jackals, wild boars, flying foxes, sloth bears and others.

7. ***Sonanadi Wildlife Sanctuary**:* It is located in the Kotdwar tehshil of Pauri Garhwal district. It is named after the Sonanadi River. 'Sona nadi' literally means 'river of gold.'

The state has 5 Conservation and Biosphere Reserves:

1. ***Asan Wetland Conservation Reserve**:* Located in the Dehradun district, it is the home to many rare and endangering species. It is also an important wintering ground for many migratory birds. It has been declared as a Ramasar site. It may be noted that Ramasar site is a wetland site designated to

be of international importance under the Ramasar Convention (also the Convention on Wetlands). This international environmental treaty was signed on 2 February 1971 in Ramasar, Iran, under the auspices of UNESCO.

2. ***Jhilmil Jheel Conservation Reserve****:* It is located on the left bank of the Ganga River in Chidiyapur forest range of Haridwar district. This marshland and jungle, the last surviving piece of primordial Terai marshland, is the place where Uttarakhand's only surviving Indian Swamp deer or Barasingha (*Cervus duvaucelii)* can be seen. Bird watching and Butterfly Walk are among some of the interesting tourism activities that can be undertaken here.

3. ***Naina Devi Himalayan Bird Conservation Reserve:*** Located in the Nainital district, it houses more than 200 rare and endangered bird species. It was opened for public viewing in 2015.

4. ***Nanda Devi Biosphere Reserve:*** It is also known as Nanda Devi National Park. It is located around the Nanda Devi Peak (7,816m) in Chamoli district. It was established in 1982. The park or the biosphere reserve was recognized as the World Heritage Site by UNESCO in 1988. In 2005, it was renamed as Nanda Devi and Valley of Flowers National Parks. The Nanda Devi Biosphere Reserve is spread across three districts—Chamoli, Pithoragarh and Bageshwar. It includes reserve forests, civil forests, panchayat or community forests, agricultural land, grassy slopes, alpine meadows or bugyals and snow-covered areas. "The snow-clad peaks, presence of over 30 glaciers, occurrence of charismatic animals and birds, deep and vast valleys, meadows and rivers and a unique culture of the native communities make the Biosphere Reserve ideal for ecotourism." (see "Nanda Devi Biosphere Reserve, India", https://unesco.org/en/mab/nanda-devi/).

5. ***Pawalgarh Conservation Reserve****:* It derives its name from the village Pawalgarh located in the foothills of Nainital district. It is the habitat of over 350 species of birds and over 125 species of butterflies among many other animals. It is interesting to note that there is a story entitled "Bachelor of Powalgarh" in Jim Corbett's book *Maneaters of Kumaon.*

Valley of Flowers

The Valley of Flowers is really am±ing. It is really a heaven for nature-lovers. Frank S. Smythe, the leader of a small group of British Mountaineers is credited with the formal discovery of the Valley of Flowers in 1931. They came upon the Valley of Flowers on their return from a successful ascent of Mount Kamet. It is true that local people always knew the existence of the valley. Initially people were afraid to visit the valley because they considered it as the abode of fairies and devtas. Smythe formally visited the valley in 1937 and he published a book titled *The Valley of Flowers: An Adventure in the Upper Himalayas* in 1938. The book inspired many to visit the valley and made it famous. He described their first encounter with the valley in the following words: "Next day we descended to lush meadows. Here our camp was embowered amidst flowers: snow-white drifts of anemones, golden, lily-like nomocharis, marigold, globe flowers, delphiniums, violets, eritrichiums, blue corydalis, wild roses, flowering shrubs and rhododendrons, many of them of flowers with homely sounding English names. The Bhyundar Valley was the most beautiful valley that any of us seen. We camped in it for two days and we remembered it afterwards as the Valley of Flowers." (quoted from Frank S. Smythe*, Valley of Flowers: An Adventure in the Upper Himalayas,* Speaking Tiger, 2015).

Rivers: The Lifeblood of Uttarakhand

The state is home to over 40 major rivers. Uttarakhand's glittering rivers in the upper Himalayas are among the world's best for river sports and adventure. There is no wonder that Uttarakhand has emerged as the hub for adventure activities and water sports. Some of the most important rivers of Uttarakhand are:

1. ***Alaknanda:*** It is one of the major tributaries of the Ganga River. It originates from the confluence of Satopanth and Bhagirath Kharak glaciers in the Chamoli district. It is considered a holy river. It is a turbulent river.

2. ***Bhilangna:*** It originates from Khatling Glacier situated about 50 km south of Gomukh. It merges with Bhagirathi River in Old Tehri.

3. ***Bhagirathi:*** It is the source stream of the Ganga River. It originates from the ice cave Gomukh (or Gaumukh). The Bhagirathi River converges with the Alaknanda River at Devprayag and then travels onwards as the Ganges.

4. ***Dhauliganga:*** It originates from Niti Valley, a remote valley located in the northernmost region of Uttarakhand. Before it merges with Alaknanda at Vishnuprayag, it is joined by Rishiganga River at Raini.

5. ***Ganga:*** The Ganga River originates as Bhaghirathi from the Gangotri Glacier in Uttarkashi district. It is 2,525 km trans-boundary river. It flows all the way to the Bay of Bengal. It is considered to be the most holy river and it has become an integral part of Indian spirituality. It serves as a lifeline for millions of Indians living in the Gangetic plains.

6. ***Gaula or Gola:*** It is also known by the names of Kichcha and Baigul in its lower courses. It passes through Kathgodam, Haldwani, Kichha and Shahi and then it joins with Ramganga River about 15 km northwest of Bareilly in Uttar Pradesh.

7. ***Gori Ganga:*** It is also known as Ghori Ganga and Gori Gad. Its water looks white most of the time. 'Gori' means 'white or fair'. It originates from the Milam Glacier in the Munsiyari Tehsil of the Pithoragarh district.

8. ***Kosi:*** It is also known as Koshi or Kaushiki. An important river of the Kumaon region, it originates from Dharapani Dhar near Kausani. It is joined by many tributaries and finally merges with Ramganga near Chamraul village in Rampur district, Uttar Pradesh.

9. ***Mandakini:*** It emerges from the Chorabari Glacier near Kedarnath at an altitude of about 3,583 metres. Before it joins Alaknanda in Rudraprayag, it merges with the Kali Ganga near Kalimath temple and the Madhyamaheswar Ganga near Ukhimath.

10. ***Nandakini:*** It originates on the western edge of Nanda Ghunti Peak located in the Chamoli district.

11. ***Pindar:*** It originates from Pindari Glacier located in Bageswar district. It is also called Pindari River. It merges with Alknanda River at Karnprayag.

12. ***Ramganga:*** A major tributary of Ganga River, it originates in the southern slopes of Dudhatoli Hill in Chamoli district. It joins the Ganga River near Kannauj district in the Fatehgarh district of Uttar Pradesh.

13. ***Sharda:*** It is the downstream of Kali River, which also refers to as Mahakali River, Kali Gaad or Kali Ganga. The Kali River originates in the Great Himalayas on the eastern slopes of Nanda Devi Massif. Sharda River is named after Sharada, another name for Saraswati, the goddess of learning.

14. ***Saryu:*** It is also known as Sarayu. It originates from a place in the extreme north of the Bageshwar district. After passing through the Kumaon Himalayas it merges with Sharda River in Pancheswar at the Indo-Nepal border and which in turn merges into the Ghaghara River, a left-bank tributary of the Ganges.

15. ***Tons:*** It originates from Bandarpunch Mountain (6,316m). The river flows through Garhwal region touching Himachal Pradesh. It meets Yamuna River below Kalsi near Dehradun.

16. **Yamuna:** It originates from Yamunotri Glacier located in Uttarkashi district. From Uttarakhand it goes to Himachal Pradesh and then passing through Haryana it finally merges with the Ganga River at Prayagraj in Uttar Pradesh. It is also a highly venerated river.

Some of the river valleys are known for their breathtaking natural beauty. Surrounded by the majestic Himalayas, the rivers and their surroundings offer pristine and tranquil environment. They attract not only pilgrims but also nature lovers, adventurers and general tourists.

Spectacular and Stunning Waterfalls

There are spectacular and stunning waterfalls in Uttarakhand. The waterfalls are among its most beautiful treasures. Some of the prominent waterfalls in Uttarakhand are:

1. Bhalu Gaad Waterfalls, Nainital district
2. Bhatta Falls, Mussoorie
3. Birthi Falls, located between Chaukori and Munsiari
4. Chineswar Waterfall, located in a small village Gauron of Kumaon region
5. Corbett Falls, Nainital

Corbett Falls (Courtesy: www.corbettnationalpark.com)

6. Garud Chatti Waterfalls, situated at Neelkanth Road near Rishikesh
7. Jharipani waterfall, located on Mussoorie-Jharipani Road about 9 km from Mussoorie
8. Kempty Falls, Mussoorie
9. Kimana Falls, Chakrata
10. Ladigarh Waterfalls, Kaladhungi, located 25 km away from Ramnagar
11. Maldevta Waterfall, Asthal, Dwara, Dehradun
12. Moigad Fall, located 69km from Dehradun in Yamunotri Road
13. Neer Garh Waterfall, Rishikesh
14. Patna Waterfalls, located at Patna village on Neelkanth Road
15. Phool Chatti Waterfall, Rishikesh
16. Rudradhari Falls, located at Kantali village on Kausani-Almora Road
17. Sahastradhara Falls, Dehradun
18. Sikhar Fall, located at Kairwaan Gaon, Dehradun
19. Tiger Falls, Chakrata, Dehradun district
20. Vasudhara Falls, near Badrinath

Vasudhara Falls. (Courtesy: Wikipedia)

Lakes—Prominent Features of the Mountain Landscape

The state is home to some of the most beautiful and enchanting natural high-altitude lakes of the world. The lakes superbly complement the scenic landscape of verdant hills, colourful meadows and snow-covered majestic mountain peaks. They attract a large number of nature lovers and tourists in general. "Some of the lakes are so beautiful added by surrounding natural charm that they should be captured as photographic memory ever. At higher elevations, glacial lakes are common sight for trekkers and mountaineers. The lakes surrounded with lush greenery and majestic mountains attract nature lovers and adventurers alike.

Naini Lake--(Courtesy: www.tourmyindia.com)

Some of the lakes in Uttarakhand are: 1. Auli Artificial lake, 2. Barradsar Lake, 3. Bedni Kund, 4. Bhalu Dam (an artificial lake), 5.Bhimtal, 6. Bhulla Tal, 7. Bisurital, 8. Brahmatal, 9. Chhatrakund, 10. Chenab Lake, 11. Deo Tal, 12.Deoria (also Devaria or Deoriya) Tal, 13. Dodital, 14. Drona Sagar, 15 Gandhi Sarovar, 16. Gauri Kund, 17. Hemkund, 18. Kagbhusandi Lake, 19. Kanchani Tal, 20. Kedartal, 21. Khurpatal, 22. Kyarkati Lake, 23. Lake Mist, 24. Machhi Tal, 25. Maheswari Kund, 26. Maldaru Tal, 27. Marinda Tal, 28. Masar Tal, 29. Mussoorie Lake, 30. Nachiketa Tal, 31. Naini Lake, 32. Nandi Kund, 33. Naukuchiatal, 34. Painya Tal, 35. Parvati Sarovar, 36. Rani Jheel, 37. Roopkund Lake, 38. Ruinsara Tal, 39. Sahastra Tal, 40. Sapt Kund, 41. Saptrishi Kund, 42. Sariyatal, 43. Saru Tal, 44. Saat-tal, 45. Shyamlatal, 46. Tara Kund, 47. Taragtal, 48. Tehri Lake, 49. Thamri Kund, 50. Vasuki Tal.

Roopkund Lake is the highest lake in Uttarakhand. It is situated at an altitude of above 4,800 metres. Located at the bottom of steep slope on Trisul mountain, it is one of the highest lakes in Uttarakhand. It is locally known as the Mystery Lake or Skeleton Lake. The lake is a picturesque tourist destination. It is also one of the most important places of trekking in Chamoli District.

Bhimtal Lake has a surface area of 118.61 acres (47.8 hectares). It is the largest natural lake in the Kumaon region. Otherwise Tehri Lake, a man-made lake, is the largest lake (12,849.50 acres) in the state. The Bhimtal Lake provides opportunities for water sports like paddle boating and rowing. The lake which offers a splendid view of natural beauty has a small island at its centre.

Saat-tal Lake is a group of seven lakes—Hanuman Lake, Ram Lake, Sita Lake, Lakshman Lake, Bharat Lake, Gadud Lake and Nal Damayanti Lake. These lakes are interconnected to each other and they present the pristine nature.

Naukuchia Lake, also known as 'Lake of Nine Corners', is situated about 4km from Bhimtal. Legends link it to Lord Brahma and there is a

temple dedicated to him. There are opportunities for angling and bird watching.

Devtal or the "Lake of Gods" is considered a paradise for adventurers and nature enthusiasts.

The Lofty Mountains

Awe-inspiring mountains have captured people's imagination for centuries. In fact, they have fascinated people from time immemorial. The mountains make Uttarakhand a unique and proud state. The state has some of the most challenging trekking routes in the world. Mountains' attraction to nature-lovers is inexorable. Hugh Thomson, a British travel-writer, says: "If mountains are just lumps of rock, there would be no point in climbing them, but they are the repository of dreams".

There are over 200 mountain peaks in Uttarakhand with altitude higher than 6,000 metres. It has two of the three highest mountains in India. The mountain peaks with altitude higher than 7,000 metres are listed below:

Name	Altitude (in metres)	District(s)
Nanda Devi	7,817	Chamoli
Kamet	7,756	Chamoli
Sunanda Devi	7,434	Chamoli-Pithoragarh
Abi Gamin	7,355	Chamoli
Mana Peak	7,274	Chamoli
Mukut Parbat	7,242	Chamoli
Hardeol	7,151	Chamoli-Pithoragarh
Chaukhamba-I	7,138	Uttarkashi-Chamoli
Trisul-I	7,120	Chamoli
Manan North West	7,092	Chamoli
Satopanth	7,075	Uttarkashi
Tirsuli	7,074	Chamoli-Pithoragarh
Dunagira	7,066	Chamoli
Chaukambha II	7,058	Uttarkashi-Chamoli
Tirsuli West	7,035	Chamoli

A view of the Mana Peak
(Courtesy: www.mountainfieldwide.com)

Narendra "Bull" Kumar, who was a member of the "Nanda Devi Indian Mountaineering Expedition 1964", says, "It is hard to conceive of a bowel, full of luxuriant grass and flowers of delicate hue; of partridges calling to each other across the gay scene; of *bharals* contentedly ruminating from their high, rocky, silent perches; of all this warm and secluded life enclosed by an icy, impassable and treacherous ring of high mountains, where bliz±rds blow constantly and living things do not dare to venture. But such is the reality of the Nanda Devi Sanctuary". (Quoted from Hugh Thomson, *Nanda Devi: A Journey to the Last Sanctuary*, Hachette India, 2003)

The Pristine Glaciers—the Sources of Important River Bodies

There are over 1,400 glaciers in Uttarakhand. They together cover an area of 4,060 square kilometres. Some of the most famous glaciers are:

1. Bandarpunch Glacier, Uttarkashi district
2. Chorabari Glacier, Rudraprayag district
3. Doonagiri Glacier, Chamoli district
4. Dokriani Glacier, Uttarkashi district
5. Gangotri Glacier, Uttarkashi district

6. Kafni Glacier, Bageshwar district
7. Khatling Glacier, Tehri Garhwal district

Khatling Glacier (Courtesy: www.tourmyindia.com)

8. Maikotoli Glacier, Bageshwar district
9. Milam Glacier, Pithoragarh district
10. Namik Glacier, Pithoragarh district
11. Nanda Devi Group of Glaciers, Chamoli district
12. Pindari Glacier, Bageshwar district
13. Ralam Glacier, Pithoragarh district
14. Tipra Bamak Glacier, Chamoli district
15. Satopanth Glacier, Chamoli district
16. Sunderdhunga Glacier, Bageshwar dstrict
17. Yamunotri Glacier, Uttarkashi district

Mesmerising views of the picturesque glaciers never fail to inspire the imagination of nature enthusiasts. Some of the glaciers with their surrounding peaks and valleys attract adventure enthusiasts, trekkers and nature lovers.

Spectacular Valleys

Uttarakhand is full of scenic valleys. They are situated in the lower Himalayan region

1. ***Bhilangna Valley:*** It is surrounded by towering snow-covered mountain peaks and it has lush green meadows and dense forests. The Bhilangna River flows through it.

A view of Bhilangna Valley (Courtesy: www.natureworld.com)

2. ***Darma Valley***: It is well-known for its rivers, water falls, and trekking sites.
3. ***Doon Valley:*** It is the largest valley in Uttarakhand and it is also one of the most picturesque valleys.
4. ***Happy Valley:*** It is situated within the hill station Mussoorie. It is also called mini-Tibet.
5. ***Har Ki Doon Valley:*** It is also known as "the Valley of Gods". It is one of the most mesmerising valleys in Garhwal Himalayas.
6. ***Harsil Valley:*** The valley is known for its extensive apple orchards. It is located in Uttarkashi District.
7. ***Johar Valley:*** It is located in Pithoragarh District along the Gori Ganga River. The Johar Valley is also known as Milam Valley or Gori Ganga Valley. In the past it was used as a major trade route with Tibet.
8. ***Kuthi Valley:*** The region surrounding this valley and the Pithoragarh District is known as Miniature Kashmir. It lies in the eastern part of Uttarakhand.
9. ***Mana Valley:*** It is located near Indo-Tibetan border in the Chamoli district.
10. ***Mandakini Valley:*** It is situated in Rudraprayag District and it has fairly dense forest cover.
11. ***Merag Valley:*** It is located close to Joshimath. It is one of the most stunning valleys of Uttarakhand.

12. ***Nelong (also Nelang) Valley*:** The valley provides one of the most adventurous and thrilling mountaineering treks in India. It offers a 360-degree view of the Tibetan Plateau.

13. ***Niti Valley:*** It is located in northernmost region of Uttarakhand. It is close to Chinese boarder. It is a remote valley.

14. ***Pindar Valley:*** Surrounded by snow-covered mountain peaks, the valley has lush green meadows, dense forests and gurgling rivers. It offers a number of thrilling adventure activities like trekking, river rafting, camping and birdwatching.

15. ***Saur Valley:*** It is the smallest valley in Uttarakhand. It is surrounded by stunning mountains and it offers sweeping views of Mount Nanda Devi, the Panchachuli Ranges and Trishul mountain.

16. ***Tons Valley:*** It is situated on the banks of Tons River.

17. ***Valley of Flowers:*** It was originally known as Bhyundar Valley. It is also known as "Phoolon Ki Ghati". It is a UNESCO World Heritage Site.

Nature's Own Gardens

Bugyals, which are called "nature's own gardens", are alpine pasture lands or meadows, lie in the elevation range between 3,300 metres (10,800 ft) and 4,000 metres (13,000ft). Bugyals are a natural marvel. They are a fabulous treat for nature lovers, nature enthusiasts and adventurers 'for their sprawling greenery, colourful wild flowers and breathtaking views of the snow-capped peaks'. In fact, they offer 'a unique and mesmerising experience for nature-lovers'. Bugyals are an important part of the Himalayan ecosystem.

Bugyals, which are usually found at an elevation of 3,300 to 4,000 metres, remain covered with snow in winter. But they come alive with mesmerising seasonal alpine flora and lush green grass. Each bugyal has its unique charm. In addition to their breathtaking natural beauty, they possess cultural, ecological and economic importance. Some of the important bugyals are:

1. Ali Bedni Bugyal, Chamoli district
2. Auli Bugyal, Chamoli ditrict
3. Chaainsheel Bugyal, Uttarkashi district
4. Chopta Bugyal, Rudraprayag district
5. Dayara Bugyal, Uttarkashi district
6. Dev Kyara Bugyal, Uttarkashi district
7. Gidara Bugyal, Uttarkashi district
8. Gorson Bugyal, Chamoli district
9. Khatling Bugyal, Tehri Garhwal district
10. Kuari Pass (or Kuari) Bugyal, Chamoli district
11. Kush Kalyani Bugyal, Uttarkashi district
12. Panwali Kantha Bugyal, Tehri Garhwal
13. Rohini Bugyal, Rudraprayag district

Trekking--an adventurous experience

Trekking in Uttarakhand is an adventurous experience. Trekking takes on much closer to nature. Some trekking may be long and arduous. Some of the familiar trekking routes are listed below:

1. Chopta-Chandrashila Winter Trek
2. Dayara Bugyal Winter Trek
3. Dev Kyara Trek
4. Devariyatal Trek
5. Dodital Trek
6. Har Ki Dun Trek

7. Kafni Glacier Trek
8. Kalindi Khal Trek
9. Kedarkanth-Vasukital Trek
10. Kedartal Trek
11. Nag Tibba Trek
12. Kuari Pass Trek
13. Milam Glacier Trek
14. Panch Kedar Trek
15. Phulara Ridge Trek
16. Pindari Glacier Trek
17. Roopkund Trek
18. Rudranath Trek
19. Satopanth Lake Trek
20. Sunderdhunga Trek
21. Valley of Flowers Trek

Parting Words

Uttarakhand is a unique state, where the creative ability of nature is at its best. It is a land of natural wonders, which captivate nature-lovers. The State has awe-inspiring majestic high mountain peaks in their full grandeur; picturesque glaciers, sparkling rivers and stunning waterfalls, innumerable springs, heavenly meadows, serene lakes with breathtakingly beautiful surroundings, lush green forests, unique flora and fauna, and adventurous trekking routes. The state has deep mythological and religious roots. It has a rich history which stretches back to pre-historic times. Every place of the state has a unique story and when these stories are woven together the land of Uttarakhand truly becomes a land of wonderful and extraordinary stories. There is no wonder nature enthusiasts, pilgrims and tourists in general throng the state.

Some words of caution are pertinent at the end. The manifestation of environmental damages is visible in the state, like other parts of the country. Uttarakhand's environment is more vulnerable and if steps are not taken to protect its environment and mitigate damages already done then it is not far away when the state will lose its features which make it a heaven for nature-lovers and create problems for all those who live here. Public participation is a must to tackle the situation. Can we follow the French philosopher and essayist Michel de Montaigne's advice? He said, ***"Let us a little permit Nature to take her own way; she better understands her own affairs than we"*** (https://hyperessay.net).

I feel honoured to contribute an article to Uttarayani's publication. I thank to my Kalyan Mitra R. D. Rikhari Ji for the same. I came to know Rikhari Ji almost three decades ago as an Editor of *Invention Intelligence* and *Awiskar*, the two popular science mag±ines of National Research Development Corporation (NRDC), an enterprise of the Ministry of Science and Technology, GoI. I am a Uttarakhandi or Pahadi by choice and not by birth. I came to know about heavenly Uttarakhand by reading Umaprasad Mukhopadhyay's travelogues, who had travelled extensively in the region. I developed a longing for visiting the places which were described in Umaprasad's book. Umaprasad was the brother of Shyama Prasad Mukhopadhyay and son of Ashutosh Mukhopadhyay. Afterwards I read the works of Jim Corbett and Ruskin Bond, which again reinforced my desire to spend time in Uttarakhand. I was also inspired by my encounter with Swami Sundaranand Ji. His book *Himalaya: Through the Lense of a Sadhu* vividly presents with more than 425 photographs, the different facets of Uttarakhand Himalayas. It also highlights how the tenuous ecological balance of the region is being

jeopardized. I am also grateful to Shri R. K. Anthwal, formerly Senior Editor of NRDC, for getting to know many facets of Uttarakhand through innumerable discussions over two decades of our acquaintance. I had also the privilege to visit his hometown Pauri along with him, where I met a large number of his family members, relatives and friends. I also visited the Maa Jwalpa Devi Mandir, located 34 km away from Pauri on the Pauri-Kotdwar Road. It was a day of celebration there and I got glimpses of spiritual and cultural flavours of Pauri-Garhwal. My discussions with Rikhari Ji also enriched my familiarity with Uttarakhand and its people. I must also admit his inquisitive mind also inspired me to know more. I have also read three volumes of Devendra Mewari Ji's memoirs titled *Meri Yadon Ka Pahad, Chhuta Peechhe Pahad* and *Jeewan Jaise Pahad*. These volumes make one familiar with a variety of different aspects of Uttarakhand. I wish more and more people read them. Some of the other books related to Uttarakhand I read recently include: The Travels of a Sadhu in the Himalayas by Jaladhar Sen and translated by Somdatta Mandal (the Bengali version of the book titled Himalaya was first published in 1900), Into the Heart of the Himalaya by Jono Lineen, *Asia Ki Peeth Par--Pundit Nain Singh Rawat: Jeewan, Anweshan Tatha Lekhan* by Uma Bhatt and Shekhar Pathak; *Gudgudi: Ek Samajik Karyakarta ki Jeevangatha* by Chandi Prasad Bhatt and *In the Service of Free India: Memoir of a Civil Servant* by B. D. Pande. It is heartening to note that Devendra Mewari, R. D. Rikhari and R. K. Anthwal are fellow travellers in our science communication journey. My neighbour in Delhi Shri J. C. Nailwal, is an important source of information related to Uttarakhand. Encouraged by my wife Sujata Samtani we bought a flat in Shyamkhet, Bhowali with the intention of spending more and more time in Uttarakhand. A dream yet to be realised.

(Dr. Subodh Mahanti served as Scientist-G and Honorary Director of Vigyan Prasar, the erstwhile autonomous organisation under the Department of Science and Technology, Government of India. He is a celebrated science writer and science communicator. Dr Mahanti is well conversed with the history, traditions and natural diversity of Uttarakhand.)

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